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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,274	03/29/2007	Dennis May	356952.00045-US	6585

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Saul Ewing LLP (Philadelphia)
Attn: Patent Docket Clerk
2 North Second St.
Harrisburg, PA 17101

EXAMINER	
SAVLA, ARPAN P	

ART UNIT	PAPER NUMBER
2185	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/595,274	MAY ET AL.	
	Examiner	Art Unit	
	Arpan P. Savla	2185	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 April 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-6 and 11-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-6 and 11-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The instant application having Application No. 10/595,274 has a total of 8 claims pending in the application, there are 1 independent claims and 7 dependent claims.

INFORMATION CONCERNING THE OATH/DECLARATION

Oath/Declaration

1. Applicant's oath/declaration has been reviewed by Examiner and is found to conform to the requirements prescribed in 37 CFR 1.63.

STATUS OF CLAIM FOR PRIORITY IN THE APPLICATION

2. Applicant's claim for the benefit of prior-filed application 0323302.0 in the United Kingdom Patent Office on October 4, 2003 under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged.

INFORMATION CONCERNING DRAWINGS

Drawings

3. Applicant's drawings submitted April 4, 2006 are accepted for examination.

ACKNOWLEDGMENT OF REFERENCES CITED BY APPLICANT

Information Disclosure Statement

4. As required by MPEP § 609(c), Applicant's submission of the Information Disclosure Statement dated November 28, 2009 is acknowledged by the Examiner and

the cited references have been considered in the examination of the claims now pending. As required by MPEP § 609 c(2), a copy of the PTOL-1449 initialed and dated by the Examiner is attached to the instant Office action.

OBJECTIONS

Specification

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "METHOD FOR DEFRAGMENTING A RANDOM ACCESS MEMORY (RAM) WHEN THE NULL THREAD IS RUNNING"

Claims

6. **Claims 2-6** are objected to because the term "**A** method according to claim 11" should instead read "**The** method according to claim 11".

7. **Claim 5** is also objected to because it recites the limitations "the thread" and "the first thread" on line 2, however, there is insufficient antecedent basis for these limitations in the claim. Applicant may consider amending the claim to read "a thread" and "a first thread" respectively.

8. **Claim 12** is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. While claim 13 is a

Beauregard claim because it involves computer software performing the method of claim 11, claim 12 cannot be considered a Beauregard claim and therefore cannot be written in its current fashion. If Applicant would like to claim a computing device that operates according to claim 11, then a new independent claim with a computing device in the preamble should be written with similar limitations to claim 11.

9. **Claim 13** is objected to because the limitation "according to a method according to any claim 11" should instead read "according to **the method of claim 11**".

REJECTIONS NOT BASED ON PRIOR ART

Claim Rejections - 35 USC § 101

10. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. **Claim 13 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter**. This claim discloses merely computer software that is not embodied on a computer-readable medium needed to realize the computer software's functionality. Therefore, the computer software simply represents functional descriptive material and is thus non-statutory subject matter.

REJECTIONS BASED ON PRIOR ART

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 2-4 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Goldman (U.S. Patent 5,963,982).

14. **As per claims 11-13**, but more specifically claim 11, Goldman discloses a method of managing in a computing device the use of random access memory arranged in the form of a plurality of blocks and used to store data in the form of a plurality of frame pages, the method comprising

using a thread of operating system code which is arranged to run on the computing device when no other thread is ready to run to initiate defragmentation of the data, and characterised by restricting defragmentation of the data to when it is determined that the frame pages of data after defragmentation can be held in a reduced number of blocks of memory in comparison to prior to defragmentation, thereby to reduce the number of blocks of the memory used to store the frame pages of data and requiring to be refreshed, and thereby reduce the power consumed from the power resources of the computing device to store the said data (col. 3, lines 33-42 and 46-56; Fig. 2). *It should be noted that because the computer system is "idle" it follows that "no other thread is ready to run". It should also be noted that Goldman discloses the stored data is "compacted" during the defragmentation routine, therefore, it follows that Goldman discloses "the frame pages of data after defragmentation can be held in a reduced number of blocks of memory in comparison to prior to defragmentation". Lastly, it should be noted that limitations "thereby to reduce the number of blocks of the*

memory used to store the frame pages of data and requiring to be refreshed" and "thereby reduce the power consumed from the power resources of the computing device to store the said data" are simply intended uses of the defragmentation. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See MPEP 2106 II(C) and 2111.04.

15. **As per claim 2**, Goldman discloses the said thread is arranged to contain code for performing the defragmentation of the data (col. 3, lines 33-42 and 46-56; Fig. 2).

16. **As per claim 3**, Goldman discloses the said thread is arranged to contain code for causing a further code to perform the defragmentation of the data (col. 3, lines 33-42 and 46-56; Fig. 2).

17. **As per claim 4**, Goldman discloses the said thread comprises a thread of operating system code for causing the computing device to adopt a reduced power mode by placing a central processing unit of the computing device into a standby mode, thereby to further reduce the power consumer from the power resources of the computing device (col. 3, lines 46-56; Fig. 2). *It should be noted that because the computer system is "idle" it follows that CPU 10 is in some kind standby mode (i.e. receiving no input). It should also be noted that the limitation "thereby to further reduce the power consumed from the power resources of the computing device" is simply an intended use of the standby mode. A recitation of the intended use of the claimed*

invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See MPEP 2106 II(C) and 2111.04.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goldman in view of Altare (U.S. Patent Application Publication 2004/0148476).

20. **As per claim 5**, Goldman discloses the said thread (col. 3, lines 33-42 and 46-56; Fig. 2).

Goldman does not disclose the said thread comprises a thread which is arranged to be a first thread to run at boot time of the computing device.

Altare discloses a defragmentation thread which is arranged to be a first thread to run at boot time of the computing device (paragraphs 0016-0017 and 0037).

Goldman and Altare are analogous because they are from the same field of endeavor, that being defragmentation of memory systems.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to apply Altare's boot time defragmentation to Goldman's RAM

defragmentation routine. The motivation for doing so would have been to assure defragmentation doesn't conflict with other applications, thus, improving overall system performance.

21. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goldman in view of Czajkowski et al. (U.S. Patent 6,453,403) (hereinafter "Czajkowski").

22. **As per claim 6**, Goldman discloses all the limitations of claim except the computing device is selected to comprise a wireless information device.

Czajkowski discloses a computing device is selected to comprise a wireless information device (col. 5, lines 4-10; Fig. 1).

Goldman and Czajkowski are analogous because they are from the same field of endeavor, that being managment of memory systems.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to apply Goldman's RAM defragmentation routine, a known technique, to Czajkowski's wireless information device, a known device ready for improvement to yield the predictable results of defragmenting stored data without requiring pointer indirection.

Conclusion

STATUS OF CLAIMS IN THE APPLICATION

The following is a summary of the treatment and status of all claims in the application as recommended by MPEP 707.70(i):

CLAIMS REJECTED IN THE APPLICATION

Per the instant office action, **claims 2-6 and 11-13** have received a first action on the merits and are subject of a non-final action.

RELEVANT ART CITED BY THE EXAMINER

The following prior art made of record and not relied upon is cited to establish the level of skill in Applicant's art and those arts considered reasonably pertinent to Applicant's disclosure. See MPEP 707.05(e).

U.S. Patent 6,038,636 (Brown III, et al.) discloses a method and apparatus for reclaiming and defragmenting a flash memory device.

U.S. Patent 6,397,311 (Capps) discloses a system and method for defragmenting a file system.

U.S. Patent 7,072,637 (Makela et al.) discloses a method and system for arranging frequently accessed data to optimize power consumption.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arpan P. Savla whose telephone number is (571) 272-1077. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sanjiv Shah can be reached on (571) 272-4098. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Arpan Savla/
Examiner, Art Unit 2185
June 20, 2009

/Sanjiv Shah/
Supervisory Patent Examiner, Art Unit 2185